This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

What is claimed is:

1. (Original) A probing tool comprising a nanotube at least partially coated with a biocompatible coating comprising silica capable of absorbing bioreactive molecules.

2. (Original) The probing tool of claim 1 wherein said coating comprises a medicament.

3. (Original) The probing tool of claim 1 wherein said coating is porous.

4. (Original) The probing tool of claim 1 wherein said silica is spherical colloidal silica particles.

5. (Original) The probing tool of claim 1 wherein said coating absorbs bio-reactive molecules.

6. (Original) The probing tool of claim 1 wherein said coating comprises a marking enzyme.

7. (Original) The probing tool of claim 1 wherein said coating comprises horseradish peroxidase.

8. (Original) The probing tool of claim 1 wherein said nanotube is a multi-walled nanotube.

9. (Original) The probing tool of claim 1 wherein said nanotube is a double-walled nanotube.

10. (Original) The probing tool of claim 1 wherein said nanotube comprises C_{60} molecules within its lumen.

11. (***Currently amended***) A probing system comprising a nanotube at least partially coated with a biocompatible coating comprising silica capable of absorbing bioreactive molecules, a microscope, and micron-resolved mechanical control.

12. (Original) The system of claim 11 wherein said microscope is a light microscope or an atomic force microscope.

13. (Original) The system of claim 11 wherein said nanotube is a multi-walled nanotube.

14. (Original) The system of claim 11 wherein said nanotube is a double-walled nanotube.

15. (Original) The system of claim 11 wherein said nanotube comprises C_{60} molecules within its lumen.

16. (Original) The system of claim 11 wherein said coating comprises a medicament.

17. (Original) The system of claim 11 wherein said coating is porous.

18. (***Canceled***) ~~The system of claim 11 wherein said coating comprises silica~~.

19. (Original) The system of claim 11 wherein said silica is spherical colloidal silica particles.

20. (Original) The system of claim 11 wherein said coating absorbs bio-reactive molecules.

21. (Original) The system of claim 11 wherein said coating comprises an enzyme.

22. (Original) The system of claim 11 wherein said coating comprises horseradish peroxidase.

23. (Original) A probing method comprising:

- partially coating a nanotube with a biocompatible coating comprising silica to form a bio-functional nanoprobe and

- contacting a vesicle with said nanoprobe.

24. (Original) The method of claim 23 wherein said nanotube is a multi-walled nanotube.

25. (Original) The method of claim 23 wherein said nanotube is a double-walled nanotube.

26. (Original) The method of claim 23 wherein said nanotube comprises C_{60} molecules within its sidewalls.

27. (Original) The method of claim 23 wherein said coating is porous.

28. (Original) The method of claim 23 wherein said coating comprises colloidal silica.

29. (Original) The method of claim 23 wherein said coating comprises spherical silica particles.

30. (Original) The method of claim 23 wherein said coating further comprises a medicament.

31. (Original) The method of claim 23 wherein said coating further comprises a marking enzyme.

32. (Original) The method of claim 23 wherein said coating further comprises horseradish peroxidase.

33. (Original) The method of claim 23 wherein said vesicle is a lipid membrane

34. (Original) The method of claim 23 wherein said lipid membrane is a cell or cell nucleus.

35. (Original) The method of claim 23 wherein said contacting step is non-destructive to the lipid membrane.

36. (Original) The method of claim 23 further comprising penetrating the lipid membrane.

37. (Original) The method of claim 23 further comprising attracting a molecule to said coating.

38. (***Currently amended***) A probing method comprising:

- providing a bio-functional nanoprobe comprising a nanotube with a biocompatible coating comprising silica

~~- partially coating a nanotube with a biocompatible coating comprising silica to form a bio-functional nanoprobe~~;

- absorbing said coating with a bio-reactive molecule;

- contacting a vesicle with said nanoprobe; and

- expelling said molecule from said coating.

39. (Original) The method of claim 38 wherein said nanotube is a multi-walled nanotube.

40. (Original) The method of claim 38 wherein said nanotube is a double-walled nanotube.

41. (Original) The method of claim 38 wherein said nanotube comprises C_{60} molecules within its sidewalls.

42. (Original) The method of claim 38 wherein said coating is porous.

43. (Original) The method of claim 38 wherein said coating comprises colloidal silica.

44. (Original) The method of claim 38 wherein said coating comprises spherical silica particles.

45. (Original) The method of claim 38 wherein said coating comprises a medicament.

46. (Original) The method of claim 38 wherein said molecule is a medicament.

47. (Original) The method of claim 38 wherein said coating comprises a marking enzyme.

48. (Original) The method of claim 38 wherein said coating comprises horseradish peroxidase.

49. (Original) The method of claim 38 wherein said contacting step is non-destructive to the vesicle.

50. (***Currently amended***) The method of claim 38 wherein said vesicle <u>is</u> a lipid membrane

51. (Original) The method of claim 38 wherein said lipid membrane is a cell or cell nucleus.

52. (Original) The method of claim 38 wherein said contacting step is non-destructive to the lipid membrane.

53. (Original) The method of claim 38 further comprising penetrating the lipid membrane.

54. (Original) The method of claim 38 wherein said expulsion step is driven by nanofluidics or molecular transport.

55. (***New***) The method of claim 38 comprising;

- partially coating a nanotube with a biocompatible, porous coating comprising colloidal spherical silica particles to form the bio-functional nanoprobe;

- absorbing said coating with a bio-reactive medicament molecule;

- contacting a lipid membrane with said nanoprobe, said contacting step being non-destructive to the lipid membrane; and

- expelling said molecule from said coating.

56. (***New***) A method of preparing a probing tool comprising providing a nanotube at least partially coated with a biocompatible coating comprising silica capable of absorbing bioreactive molecules.

57. (***New***) The method of claim 56 further comprising absorbing at least one bioreactive molecule.

58. (***New***) A probing method comprising contacting a vesicle with a nanoprobe, said nanotube being at least partially coated with a biocompatible coating comprising silica to form a bio-functional nanoprobe.